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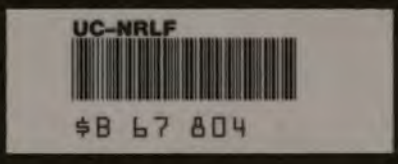

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GENERAL

SCOTCH EDUCATION DEPARTMENT

THE

CLEANSING AND DISINFECTING

OF

SCHOOLS

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MEMORANDUM.

The following directions for the cleaning and keeping clean of schools have been prepared at the request of this Department by the expert advisers of the Local Government Board for Scotland, and are issued under the joint authority of that Board and the Scotch Education Department.

The directions are based upon actual experience, and take full account of practical difficulties. They represent the minimum precautions that ought to be enforced by every School Board who take due account of the health of the children attending their schools. The Department are, therefore, confident that these directions will receive the careful consideration of all School Boards and managers, and that, after a due interval, His Majesty's Inspectors will be able to report that, in every school in the country, the instructions now issued are being observed, except where it has happily been found possible to better them.

Scotch Education Department,
November, 1907.

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THE CLEANSING AND DISINFECTING OF SCHOOLS.

1. The Sources of Dirt in Schools.

The principal sources of dirt in schools are the following:—Shoes fouled by the dirt of the roads and streets; clothing fouled by dust or dried organic secretions; scales shed from the skin of the body and scalp; dried organic secretions from the skin, mouth, nose, etc.; dust accumulating in hair and clothing; organic dust roused from floors by the movements of the children; cast hairs; woollen, linen or cotton fibres; organic material blown from foul accumulations outside the school; soot and other inorganic dust particles.

The bodies of children are always in a state of very active growth. Hence the bodily secretions are relatively large in amount and readily become offensive in quality, even when the children are healthy. Within the school the children are continually moving. They keep the school dust in perpetual circulation; they add to the organic impurity of the atmosphere by respiration, by repeated coughing or sneezing, or, where slates are used, by spitting. Occasionally there are cases of skin diseases, such as itch (scabies), or impetigo, or favus, or ringworm, or moist eczema. There are frequently "colds in the head," or inflamed eyes, or inflamed surfaces of the scalp, etc. These all contribute to the organic dust of a school. When infectious diseases—*e.g.*, certain forms of inflamed eyes, or of inflamed throats or tonsils, scarlet fever, diphtheria, measles, whooping-cough, or chickenpox—are present, the dirt may become immediately dangerous as well as offensive. The particles of dust act as rafts to convey microbes of every sort from place to place.

The "close smell" so familiar in the schoolroom is due partly to the subtle organic impurities of the air breathed out by the children, partly to the decomposition of organic dirt on the children's bodies or in the room. Such decomposition is normally caused by microbes. Hence, to cleanse a schoolroom properly, it is necessary to destroy the germ-life as well as to remove the visible dirt. This is why periodic disinfection is advisable, even when no known infectious disease has been present.

2. The General Principles of Cleansing and Disinfection.

Accordingly, to secure a clean and wholesome atmosphere in the school it is essential that all organic dirt should be systematically and periodically destroyed and removed. This can most easily be done by moist cleaning, such as the ordinary wet-scouring with soap and soda. For the cleansing of greasy surfaces—*e.g.*, desks, seats, tables, floors, dadoes, and all objects exposed to contact of the bare hands or skin—active scouring with soap or some similar solvent is essential. For simple

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moistening, either with water or suitable liquid disinfectants, the most rapid mechanism is a spray-pump or garden syringe with a very fine rose. Several effective spray-pumps are now available. It is commonly assumed that the moistening of walls or dadoes, or papered surfaces, especially if unvarnished or unpainted, may cause serious damage. But this assumption is wrong. Experiment has shown that walls, whether papered, or varnished, or painted, or merely sized or whitewashed, may be thoroughly wetted with water or watery solutions without injury or stain. Usually, however, the schoolroom wall surfaces are painted or sized, the dadoes being of wood. There is thus no difficulty or danger in thoroughly wetting both walls and dadoes. With an efficient spray-pump the walls, floor and ceiling of a room 20 feet square can be thoroughly wetted with disinfectants in ten minutes or less. When the pump is properly adapted, ceilings 12 or 14 feet high can be conveniently reached without scaffolding of any kind. The "tarry" disinfectants, even in dilute mixtures (or emulsions), are not, as a rule, suitable for spraying, except where the surfaces can be afterwards rubbed or washed, or where slight disfigurement is of no consequence. But there are several good disinfectants that can be made up in watery solutions suitable for the spraying of almost any surface.

Every schoolroom should be completely cleansed by moist cleaning and disinfection at least once a year. Some rooms, particularly infant rooms, may require such thorough cleaning several times a year. Offices should be sprayed with disinfectants as often as is necessary to keep them free from offensive odours.

It is to be assumed that every schoolroom is systematically swept and dusted once a day, and that the floors are wet-scoured as often as is necessary to keep them clean and wholesome.

To reduce the circulation of dust during the sweeping process the floor should be treated with moist sawdust, or some similar material, or lightly sprayed. Recently the oiling of floors periodically with certain preparations has been recommended as a means of "weighting" the floor dust. Desks, forms, tables, etc., should be "dusted" every day, but the duster should always be moistened. Dry-dusting with cloths or switches ought to be discontinued.

All class-rooms ought to be flooded and reflooded with fresh air for as many hours a week as circumstances render practicable. Windows should be opened at every possible opportunity, and should remain open except when the weather makes closing necessary. In our climate, the air is never too cold for a healthy person to breathe.

3. Specific Directions for Cleansing.

The following directions, which are in varying degrees applicable to all schools, both in town and country, indicate in considerable detail the measures necessary to keep the schools in a

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hygienic condition. The Head-master should be responsible for seeing that these directions, so far as applicable to his school, are systematically and thoroughly carried out.

I. Schoolrooms and School Appliances.

(1) The walls and ceilings of all the principal rooms, class-rooms, store-rooms, lobbies and staircases should be first brushed free of dust and cobwebs, then washed with clean cold water, and thereafter whitewashed or re-coloured. But where there is a spray-pump, or a good garden pump with a fine rose, the walls and ceilings should be thoroughly sprayed, until they are running wet. If you spray from below upwards—not, as is commonly done, from above downwards—you will find that the walls will dry without a stain. The reason is simple—the water runs easily off a moist surface, and does not soak unequally into the plaster or paper or size. All unvarnished or unpainted passages, staircases and store-rooms should, unless for special reasons, be lime-washed. Lime-wash for this and the purposes subsequently detailed should be made with freshly-burned lime, and to each gallon of the mixture a quarter of a pound of chloride of lime should be added. The lime and the chloride together form a good disinfectant. But whitening mixed with a suitable disinfectant may serve the same purpose.

Cloak-rooms and cloak-lobbies should receive special attention. Hat-pegs and dressing-booths should be first well scoured with hot water, soap and soda, and then sprayed or washed with disinfectants.

Playing-sheds should also be periodically cleaned by the same methods.

All school windows should be kept clean and bright.

(2) All floors, desks, seats, doors, window-frames, chairs, tables, black-boards, and all other woodwork, fixed or movable, should be thoroughly washed and scrubbed with hot water, soap and soda, and thereafter re-varnished where necessary. The floors need the most special attention, for the openings between each couple of boards always are a receptacle for many varieties of filth. In these openings, narrow as they are, gather dust from the clothing, scales from the skin, the dried products of coughing or spitting, the germs of infectious diseases, and many other forms of vegetable and animal refuse. All these, disturbed by air currents and passing from time to time into the room, persistently contaminate the school atmosphere, so lessening the vitality of the children and increasing their liability to infectious disease. Defects in the flooring ought to be repaired; loose and rotting boards should be displaced. Then the floor should be well swept before the washing. In bad cases it is advisable to use some strong disinfectant.

(3) All presses, cupboards and store-rooms should be completely cleared out and washed with hot water, soap and soda. The contents, before re-packing, should be thoroughly freed from dust.

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(4) All curtains, window blinds and dusters should be boiled and washed. All mats should be well beaten and well exposed to the air.

(5) All map-boxes, wall maps, pictures, ornaments, and apparatus of every kind should be taken to the outside, thoroughly dusted, and those of them that will wash should be washed. Maps are always a dangerous resting-place for dust.

(6) All slates, if kept in school, should be washed. Slates retain the grease due to handling and the decomposing products due to spitting. In schools where the same slates are used by different children, the slates will form a ready means of conveying mouth or throat affections, such as infectious tonsillitis or diphtheria or scarlet fever. Tongue-licking of slates is not uncommon, and one child may unknowingly lick the slate used earlier in the day by a neighbour. Dirty slates thus multiply the chances of infection. In short, the use of slates should, where possible, be discontinued.

(7) All sewed work and lap bags, if kept in school, should be hung out and aired on a brisk windy day before they are repacked.

(8) All pens, pen-holders, pen-boxes, ink-bottles, pointers and rulers should be well washed in hot water and immediately dried.

(9) If there is a library in connection with the school, all the books should be carried into the open air and well dusted. The book-cases should be thoroughly washed with hot water, soap and soda.

(10) All old blotting-paper, waste-paper, book rags and old copybooks should, if there is any special reason for preserving them, be aired and dusted with the other books; otherwise they should be burned.

(11) Where it is necessary to preserve copybooks or other manuscript books, a simple method of disinfection after a school epidemic is the following:—

Take as many pieces of blotting-paper as may be required. Cut them to the size of the copybook. Soak them in a disinfectant of the necessary strength. Insert one of the soaked pieces between each two leaves of the copybook. Close, and cover up the whole in a waterproof sheet for twenty-four hours. On opening, gently remove the blotting-paper, and, if the soaking has not been too great, the writing will be found uninjured. This process may be advisable when copybooks must be preserved for inspection.

(12) If the school has a museum, all the articles should be gone over in detail and cleaned as well as the circumstances permit.

(13) The same rigid precautions apply with yet greater force to all schools where there is a Technical Department, such as cookery or chemistry.

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(14) Throughout all the process of cleaning, doors, windows and ventilators should be kept continuously open. The rooms are thus flooded and re-flooded with fresh air, which itself is a strong disinfectant and purifier.

(15) All ventilators, including inlets, outlets, ducts, tubes, shafts, cowls, underfloor ventilators, window-sashes, fanlight openings, fans, and other ventilating and heating appliances, should be carefully examined, cleaned and, where necessary, repaired.

II. Special Sanitary Appliances.

The special sanitary appliances of a school include water-closets, pail-closets, earth-closets, or some other form of closet, urinals, lavatories, ashpits, cesspools, sewage and water drains, disconnecting traps, water cisterns for closets and drinking. All these the Visiting Committees should subject to the most searching scrutiny.

(1) *Water-closets.*—In schools provided with water-closets the following precautions are essential:—

(*a*) If the supply of water is small, or not constantly reliable, the closet should be disused. This applies specially to rain-water closets.

(*b*) The ventilation, both of drain and closet, should be such as to keep the closet permanently free from offensive smells. The intermittent use of deodorisers, such as chloride of lime or carbolic acid, is not effective unless this condition is fulfilled.

(*c*) Even where water is copious, pan-closets should be displaced by some better pattern. It is almost impossible to keep pan-closets from becoming a nuisance.

(*d*) Water-closet walls, ceilings and woodwork should be treated by the same processes as are detailed below for other forms of closet.

(2) *Other Forms of Closet.*—(*a*) All cesspits should be cleaned out, deodorised with earth, ashes, charcoal (in the form of soot or any other form), chloride of lime, or other efficient deodorant, then filled and permanently disused. The cesspit closet is the worst form possible for a school. In such cases the pail system should be adopted, if a water-closet is impossible.

(*b*) All woodwork should be thoroughly scrubbed with hot water, soap and soda, and disinfected or deodorised where necessary. The under surfaces should be lime-washed.

(*c*) The floors, if stone or cement, should be scrubbed and disinfected. Wooden floors should be displaced by cement.

(*d*) The walls and ceilings should be scrubbed down and lime-washed.

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(*e*) All closets should be shut off absolutely from open ashpits or middens. It is common to use the ashpit as a convenient receptacle for unpurified, undeodorised filth. This is above all things objectionable, and ought everywhere to be discontinued.

(*f*) Wherever possible, the pail system, with a proper supply of earth, ashes, soot, peat-dust, disinfective saw-dust, or other deodorant should be introduced. On this system the daily removal of excreta and the daily cleansing of the closets become quite practicable. Pail-closets should be cleaned out every day, or at least every second day.

(*g*) Where the ventilation already provided is not enough to keep the closet free from offensive smells, the doors should be left open.

(*h*) The inlets at floor level should be such as to admit a copious supply of air, and every closet roof should have an outlet ventilator.

(*i*) The amount of woodwork should, to save labour in cleaning, be reduced to the lowest possible.

(3) *Urinals.*—The common defect of these is insufficient water. They should be thoroughly washed and lime-washed, till all ammoniacal smell is prevented. Means should be taken to have them regularly cleaned out and flushed with water.

(4) *Ashpits.*—These should not receive any closet refuse. They should be small and protected from rain and wind. They should be well removed from school doors or windows.

(5) *Cesspools.*—These should be ventilated and so constructed as to give instant evidence of their being full. Arrangements should be made to have them frequently emptied. The drain should have a disconnecting trap just before entering the cesspool. But where the soil is porous and an overflow from the cesspool can be arranged, the cesspool should be disturbed as little as possible. It is then a "septic tank." Expert opinion, however, should be taken to ensure that the cesspool is of proper construction and entirely safe.

(6) *Drains.*—Frequently the sewage drains are merely stone-built drains. This makes thorough sanitation an impossibility. School Boards should see that every sewage drain on their premises is made with properly cemented spigot and socket pipes. The surface-water drains should be trapped.

(7) *Lavatories.*—To these the same directions apply as to water-closets. The walls, floor and woodwork should be treated as in the other case. There should be as little woodwork as possible. The wash-hand basins should be kept thoroughly clean. There should be a constant supply of soap for any child to use at any time. The soap should not be locked away and doled out periodically. Clean towels should be always available.

(8) *Traps.*—All traps should be examined, and, where necessary, cleaned and flushed.

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(9) *Drinking Water*:—

(*a*) All cisterns for drinking-water should be cleaned at least once a year. They should have a cover to keep out dust.

(*b*) All drinking-cups should be frequently disinfected.

(*c*) No pail or other uncovered vessel for drinking-water should be kept within the schoolroom.

III.—Cleansing Register.

Every school should have a Cleansing Register. In this should be entered the nature of the periodic cleanings, the date when each room is cleaned, and generally such information as will guide any Inspector of the Department, or Medical Officer, or School Board Member, or School Visitor, or other authorised person in judging whether the cleansing of the school is systematically and efficiently attended to.

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